

In October the Appleby Archaeology Group welcomed Don O'Meara from Wardell Armstrong Archaeology Ltd to their first talk of the winter season at the Appleby Public Hall. Don's talk was entitled Medieval Drainage, Sanitation & Health, an unusual and interesting subject.

Don began by defining his terms as 'the provision of water for human benefit and removal of water that has been perceived as tainted by human, animal or industrial contact'. Such provision includes the sources, conduits, distribution, maintenance & modes of consumption relating to the water needs of human populations. Transportation of water to users can be by means of gravity as in aqueducts or canals, by pressurised pipes sealed from the surroundings & for most of human history by man, or more accurately, woman power, a method still much employed throughout the non-industrialised world.

He explained that engineered water systems predate the Medieval period by many centuries. Both the Minoan & Greek civilisations had practical water supply and waste management systems. However, it is the Romans who brought a degree of sophistication not reached again in Britain until the 19th century. Although most of these early systems fell into decay, some elements remained functioning into the early medieval period, most notably the 'most remarkable fountain' described by St Cuthbert on his visit to Carlisle in around 685AD. Other notable achievements of the Roman engineers, still to be seen around the forts on Hadrian's Wall, were the canals & aqueducts which brought water from distant sources for domestic consumption, as well as for bath houses & latrines. Don raised a laugh from his audience by quoting a rather familiar passage from a social commentator called Reg, who allegedly lived in an Eastern Province of the Empire in the 1st century AD - "All right, but apart from the sanitation, medicine, education, wine, public order, irrigation, roads, the fresh water system and public health, what have the Romans ever done for us?"

After the fall of the Roman Empire and the inevitable decay of the infrastructure, there was a fairly long period before the rediscovery of the techniques required to provide engineered water & drainage in western Europe. The Crusaders brought back tales of sophisticated living in the Islamic world, as did the Normans, through their trading forays. The expansion of the monasteries in the 12th century was the key moment as large groups of monks came together to live. Their synchronised activities created high peak demands for water and the wealth the monasteries were accumulating allowed investment to take place. In addition, sanitation & cleanliness was starting to be seen once again as a moral goal, as was the establishment of basic medical facilities for the brothers and, to a more limited extent, the local population. The Cistercians also held annual meetings amongst the hierarchy where ideas could be exchanged. Amusingly, medieval pilgrims to Santiago de Compostela were so amazed by the taps on public fountains and in religious establishments, that they were often stolen.

As may be expected, Royal palaces were also early innovators, with Wolvesey Palace in Winchester thought to be one of the earliest, boasting flushing latrines circa 1129-35.

Once these limited systems had been established by the monasteries, particularly those in urban areas, and also by the monarchy, the benefits of providing public water

supplies began to be appreciated by those who held high office in the developing cities. Thus, a sense of civic pride, status & Christian charity helped to drive change during the 13th and 14th centuries. Canterbury (where it was not unknown for citizens to block supply pipes in order to emphasize a grievance) and Bristol were early adopters, as were many northern Italian and German cities. Dublin, probably through its links with Bristol, developed a water supply system in 1244. In London, an underground channel called the Great Conduit, was started in 1245, after the City acquired the springs near the Tyburn and built a reservoir to provide a head of water. Initially, it ran as far as Cheapside, where there was a building where citizens could draw water. As cities increased in size, demand naturally grew, from both domestic and, increasingly, industrial users, such as brewing and tanning. Other cities were not so fortunate – York for instance had no piped water until 1650 & Don questioned the authenticity of the rather pleasant, sweet manure smell pervading the present day Jorvik Experience in that city.

He went on to explain that clearly, civic water distribution systems could only be installed with the co-operation of the citizens. The works required were disruptive, required investment and an ongoing programme of maintenance, none of which could be achieved without a general agreement that the investment was a public good, overriding individual interests. A half built system, or one with parts missing because no agreement could be reached over cost or route, was no system at all. Professional water carriers were still a vital part of the water distribution network. In 1500, London had more than 4,000. Regulations governing their work have been a valuable source of information concerning daily life in the cities.

The Romans had used lead pipes of standardised sizes so that fee paying consumers could be charged accordingly. Through excavation, we know that early medieval pipes were generally made of wood. Rolled lead came to be adopted widely and terracotta was also used, generally where pottery manufacture was already established. These early public supply systems only provided water to public facilities, such as fountains and standpumps. However, it wasn't long before the more elevated and richer members of society wanted private supplies to their own houses. Originally, these supplies were provided through 'quill' pipes, so named because the diameter of the pipe was about the same as the quill of a swan's feather. Filling a kettle would probably have taken some patience.

Water quality was always a major factor in public provision and there was until modern times a fine balance between quality and quantity. Archaeology tells us that even in the medieval period, water filters were installed in certain supplies used for medical purposes but for the majority, raw water was the norm, so the quality depended upon the source and the degree to which pollution could be controlled. One reason for beer being such a common drink was that it was safer to drink than water. It was well known that waste water should be kept distinct from fresh water supplies and laws and proclamations were made to encourage hygiene but since the onus was on individual citizens to dispose of their own waste, and few public facilities were available assist to with the process, ordinances were often ignored. Don explained that, although from the 21st century we view the medieval perception of waste as fairly objectionable, it should be seen in context. It had always been part of everyday life and the connection with disease was unknown.

It took the moral rectitude and ingenuity of the Victorians in the 19th century to turn this situation around and to properly survey, engineer and construct water supply and sewage systems, all for the public good. Corporations, sometimes founded by Acts of Parliament where necessary, took on the expense of construction and maintenance, charging consumers by means of the water rate. These are the systems inherited by today's privately owned water companies.

Don was thanked and applauded for his interesting and amusing talk by the members of the group.

You can view a sample from an interesting book on this subject (rather than having to pay £23 to buy it) if you Google 'medieval quill pipes'